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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,568	04/02/2002	Jarle Rogn Jacobsen	02405.0214	4496

7590

06/07/2004

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EXAMINER

GREEN, BRIAN

ART UNIT PAPER NUMBER

3611

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,568

Applicant(s)

JACOBSEN ET AL.

Examiner

Brian K. Green

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-43 and 47-54 is/are rejected.
- 7) ☒ Claim(s) 29 and 44-46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 5, 2004 has been entered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the grooves in the first plate which are immediately above the grooves in the second plate as defined in claim 30 (with regard to the embodiment shown in figure 1), the laterally offset grooves defined in claim 31 (with regard to the embodiment shown in figure 1), the recess in the plate as defined in claim 39, the fibers resting against the edge as defined in claim 42, and the recess defined in claim 43 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because on line 3 "plastics" should apparently be "plastic". On line 6, "thereof, At" should apparently be "thereof. At". Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: on page 4, line 9, "Fig. 5" should apparently be "Fig. 1". On page 4, lines 15-16, "Fig. 1" should apparently be "Fig. 2".

Appropriate correction is required.

Claim Objections

Claims 29-31 and 38-46 are objected to because of the following informalities: In claim 29, last line, "the light source device" should apparently be "the at least one elongate light source device" to be consistent with claim 29, line 6. In claim 38, line 8, "the light source device" should be "the at least one elongate light source" in order to be consistent with the language used in claim 38, line 6. In claim 38, lines 3,5, and 7, "the plate" should be "the at least one plate". In claim 38, lines 12 and 13, claim 39, line 2, and claim 40, line 2, "the light distribution plate" should be "the at least one light distribution plate". In claim 41, line 8, "the light source device" should be "the at least one elongate light source" in order to be consistent with the language used in claim 41, line 6. In claim 41, lines 3,5, and 7, "the plate" should be "the at least one plate". In claim 41, lines 12 and 13, claim 42, line 2, and claim 43, line 2, "the light distribution plate" should be "the at least one light distribution plate". In claim 44, lines 3,5, and 7, "the plate" should be "the at least one plate". In claim 44, lines 10,11,12, and 14-15 "the light distribution plate" should be "the at least one light distribution plate". In claims 53 and 54, lines 3,5, and 7, "the plate" should be "the at least one plate". In claim 53, lines 10 and 11, "the light distribution plate" should be "the at least one light distribution plate". In claim 54, lines 8-9 and 10-11, "the light distribution plate" should be "the at least one light distribution plate". Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims 30 and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Stating in claim 30 that the grooves in the first light plate are parallel with and **immediately above** the grooves in the second light distribution plate is considered to be new matter. Claim 29 is directed to the embodiment shown in figure 1 and the applicant fails to show or define in the specification that the grooves in the first plate are immediately above the grooves in the second plate. The applicant defines in the specification, page 5, lines 23-25, that the grooves in the first plate are immediately above the grooves in the second plate with regard to the embodiment shown in figure 2. Stating in claim 31 that the grooves in the first light plate are **laterally** offset with the grooves in the second light distribution plate is considered to be new matter. Claim 29 is directed to the embodiment shown in figure 1 and the applicant fails to show or define in the specification that the grooves in the first plate are laterally offset with the grooves in the second plate. The applicant defines in the specification, page 5, lines 25-27, that the grooves in the first plate are laterally offset with regard to the grooves in the second plate with regard to the embodiment shown in figure 2.

Claims 38-43 and 47-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 38, lines 6-9 are misdescriptive since the plurality of light-emitting diodes are not an "elongate light source device" extending transverse to the parallel grooves as indicated in these lines. In claim 41, lines 6-9 are misdescriptive since the plurality of optical fibers are not an "elongate light source device" extending transverse to the parallel grooves as indicated in these lines. In claim 47, lines 7-8, it is not clear which grooves are being referred to by the phrase "the parallel grooves", i.e. the grooves in the first plate or the second plate. In claim 47, lines 8 and 13, it is not clear which plate is being referred to in the phrase "the plate", i.e. the first plate or the second plate. In claim 47, lines 12 and 14-15, it is not clear which light distribution plate is being referred to in the phrase "the light distribution plate", i.e. the first plate or the second plate.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 35 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Osakada et al. (U.S. Patent No. 5,521,796).

Osakada et al. shows in figures 1-7 an illuminated panel arrangement comprising at least one clear transparent plate (1) having opposite side faces, one of the sides of the plate being provided with a plurality of parallel grooves (13), at least one elongate light source (41) extending transverse to the parallel grooves and located along at least one of the ends, a light diffuser plate (43) positioned adjacent to the other side face of the plate, a light reflector plate

(42) positioned adjacent to the one side face, and the grooves (13) increase in width and depth in a direction away from the light source device. In regard to claim 53, Osakada et al. discloses in column 5, lines 31-33, that the grooves widths are between .005mm-.6mm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osakada et al. (U.S. Patent No. 5,521,796) in view of Ciupke et al. (U.S. Patent No. 5,461,547).

Osakada et al. shows in figures 1-7 an illuminated panel arrangement comprising at least one clear transparent plate (1) having opposite side faces, one of the sides of the plate being provided with a plurality of parallel grooves (13), at least one elongate light source (41) extending transverse to the parallel grooves and located along at least one of the ends, a light diffuser plate (43) positioned adjacent to the other side face of the plate, a light reflector plate (42) positioned adjacent to the one side face. Osakada et al. does not disclose whether the diffuser (43) is made from a film. Ciupke et al. shows in figure 2 an illuminated display that includes a diffuser (31) that is made from a film, see column 3, lines 15-25. In view of the teachings of Ciupke et al. it would have been obvious to one in the art to modify Osakada et al. by making the diffuser from a film since this would allow the light to be diffused in a better

and less expensive manner and it is considered within one skilled in the art make the diffuser out of any material as desired.

Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osakada et al. (U.S. Patent No. 5,521,796) in view of Ohe (U.S. Patent No. 4,729,068).

Osakada et al. shows in figures 1-7 an illuminated panel arrangement comprising at least one clear transparent plate (1) having opposite side faces, one of the sides of the plate being provided with a plurality of parallel grooves (13), at least one elongate light source (41) extending transverse to the parallel grooves and located along at least one of the ends, and a light diffuser plate (43) positioned adjacent to the other side face of the plate. Osakada et al. does not disclose whether the light diffuser plate is an opal plate. Ohe discloses in column 1, lines 20-22 that the idea of making a light diffuser plate from an opal plate is conventional. In view of the teachings of Ohe it would have been obvious to one in the art to modify Osakada et al. by making the light diffuser plate from an opal plate since this would allow the light to be diffused in an easier, cheaper, and better manner. In regard to claim 33, Osakada et al. discloses the idea of making the transparent plate (1) between .5mm and 80mm. In regard to claim 34, Osakada et al. discloses the use of a light reflector plate (42) positioned adjacent to the one side face.

Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osakada et al. (U.S. Patent No. 5,521,796) in view of Blanchet (U.S. Patent No. 4,811,507).

Osakada et al. shows in figures 1-7 an illuminated panel arrangement comprising at least one clear transparent plate (1) having opposite side faces, one of the sides of the plate being provided with a plurality of parallel grooves (13), at least one elongate light source (41) extending transverse to the parallel grooves and located along at least one of the ends, and a light diffuser plate (43) positioned adjacent to the other side face of the plate. Osakada et al. does not disclose placing a second light source device along a second end of the plate and making at least one of a width and a depth of the grooves, as seen from each of the light sources, increase until about a point midway between the light sources. Osakada et al. shows in figure 7 that the grooves (13) increase in width and depth in a direction away from the light source device. Blanchet shows in figure 1 the idea of placing light sources (2,3) at each end of the plate and increasing the depth of the grooves, as seen from each of the light sources, until about a point midway between the light sources. In view of the teachings of Blanchet it would have been obvious to one in the art to modify Osakada et al. by placing a second light source on the second end of the plate and increasing the depth of the grooves until about a point midway between the light sources since this would allow the plate to be illuminated in a more brilliant manner which would allow the plate to illuminate a display in a better and more brilliant manner. In regard to claim 37, Osakada et al. shows in figures 6-8 that the depth and width increase in a non-linear manner.

Claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osakada et al. (U.S. Patent No. 5,521,796) in view of Tokunaga (U.S. Patent No. 5,375,043) or Redmond et al. (U.S. Patent No. 5,664,862).

Osakada et al. shows in figures 1-7 an illuminated panel arrangement comprising at least one clear transparent plate (1) having opposite side faces, one of the sides of the plate being provided with a plurality of parallel grooves (13), at least one elongate light source (41) extending transverse to the parallel grooves and located along at least one of the ends, and a light diffuser plate (43) positioned adjacent to the other side face of the plate. Osakada et al. does not disclose making the at least one elongate light source in the form of light emitting diodes. Tokunaga shows in figures 1 and 2 a plate (1) that includes light emitting diodes (2) mounted into holes (1b) placed in the sides of the plate. Redmond et al. shows in figure 2 a plate (13) that includes light emitting diodes (47) mounted into holes placed in the sides of the plate, see column 3, lines 64-68. In view of the teachings of Tokunaga or Redmond et al. it would have been obvious to one in the art to modify Osakada et al. by replacing the light source (41) with light emitting diodes since this would reduce the amount of heat generated by the light source, would reduce the amount of energy required to power the light source, and would reduce maintenance costs, i.e. led's last a lot longer than other types of light sources. In regard to claim 39, Tokunaga and Redmond et al. show that the light emitting diodes are placed within holes in the sides of the plate. In regard to claim 40, it would have been an obvious matter of design choice to provide approximately as many light emitting diodes as grooves in the plate since the applicant fails to provide any advantage to making the number of leds and grooves approximately equal and the number of light emitting diodes used by Osakada et al. in view of Tokunaga or Redmond et al. would work equally as well. Further, it is considered within one skilled in the art to vary the number of light emitting diodes based upon the desired brightness of the display.

Claims 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osakada et al. (U.S. Patent No. 5,521,796) in view of Shahidi-Hamedani et al. (U.S. Patent No. 5,165,187).

Osakada et al. shows in figures 1-7 an illuminated panel arrangement comprising at least one clear transparent plate (1) having opposite side faces, one of the sides of the plate being provided with a plurality of parallel grooves (13), at least one elongate light source (41) extending transverse to the parallel grooves and located along at least one of the ends, and a light diffuser plate (43) positioned adjacent to the other side face of the plate. Osakada et al. does not disclose making the at least one elongate light source in the form of a light emitting diode which supplies a plurality of optical fibers. Shahidi-Hamedani et al. shows in figure 1A a plate (2) that includes a light emitting diode (20) which supplies a plurality of optical fibers (12) which are received in a recess in the plate. Shahidi-Hamedani et al. discloses in column 3, lines 1-3 that the light source can be a light emitting diode. In view of the teachings of Shahidi-Hamedani et al. it would have been obvious to one in the art to modify Osakada et al. by replacing the light source (41) with a light emitting diode and optical fibers since this would reduce the amount of heat generated by the light source, would reduce the amount of energy required to power the light source, and would reduce maintenance costs, i.e. led's last a lot longer than other types of light sources. In regard to claim 42, Osakada et al. in view of Shahidi-Hamedani et al. does not disclose resting the output ends of the fibers against the end edge of the plate. It would have been an obvious matter of design choice to place the output ends against the end edge of the plate since the applicant fails to define any advantage to placing the output ends against the end edge and placing the output ends within a recess as taught by Osakada et al. in

view of Shahidi-Hamedani et al. would work equally well. In regard to claim 43, Shahidi-Hamedani et al. shows in figure 1A that the output ends of the fibers are placed within a recess in the plate.

Allowable Subject Matter

Claim 47 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Claims 48-52 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.


Claims 29 and 44-46 are allowable over the prior art of record but include objections, as indicated above, which must be corrected before the claims can be allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Green whose telephone number is (703) 308-1011. The examiner can normally be reached on M-F 7am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on (703) 308-0629. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



BRIAN K. GREEN
PRIMARY EXAMINER

bkg

June 1, 2004